No. 9300027

THE UNITED STATES OF AMERICA

TO ALL TO WHOM THESE PRESENTS SHALL COME:

Idaho Agricultural Experiment Station

Whereas, THERE HAS BEEN PRESENTED TO THE

Secretary of Agriculture

AN APPLICATION REQUESTING A CERTIFICATE OF PROTECTION FOR AN ALLEGED NOVEL VARIETY OF SEXUALLY REPRODUCED PLANT, THE NAME AND DESCRIPTION OF WHICH ARE CONTAINED IN THE APPLICATION AND EXHIBITS, A COPY OF WHICH IS HEREUNTO ANNEXED AND MADE A PART HEREOF, AND THE VARIOUS REQUIREMENTS OF LAW IN SUCH CASES MADE AND PROVIDED HAVE BEEN COMPLIED WITH, AND THE TITLE THERETO IS, FROM THE RECORDS OF THE PLANT VARIETY PROTECTION OFFICE, IN THE APPLICANT(S) INDICATED IN THE SAID COPY, AND WHEREAS, UPON DUE EXAMINATION MADE, THE SAID APPLICANT(S) IS (ARE) ADJUDGED TO BE ENTITLED TO A CERTIFICATE OF PLANT VARIETY PROTECTION UNDER THE LAW.

NOW, THEREFORE, THIS CERTIFICATE OF PLANT VARIETY PROTECTION IS TO GRANT UNTO THE SAID APPLICANT(S) AND THE SUCCESSORS, HEIRS OR ASSIGNS OF THE SAID APPLICANT(S) FOR THE TERM OF *eighteen* YEARS FROM THE DATE OF THIS GRANT, SUBJECT TO THE PAYMENT OF THE REQUIRED FEES AND PERIODIC REPLENISHMENT OF VIABLE BASIC SEED OF THE VARIETY IN A PUBLIC REPOSITORY AS PROVIDED BY LAW, THE RIGHT TO EXCLUDE OTHERS FROM SELLING THE VARIETY, OR OFFERING IT FOR SALE, OR REPRODUCING IT, OR IMPORTING IT, OR EXPORTING IT, OR USING IT IN PRODUCING A HYBRID OR DIFFERENT VARIETY THEREFROM, TO THE EXTENT PROVIDED BY THE PLANT VARIETY PROTECTION ACT (84 STAT. 1542, AS AMENDED, 7 U.S.C. 2321 ET SEQ.)

WHEAT

'Meridian'

In Testimony Whereof, *I have hereunto set my hand and caused the seal of the* Plant Variety Protection Office *to be affixed at the City of* Washington, D.C. *this* 30th *day of* September *in the year of our Lord one thousand nine hundred and* ninety-four.

Attest:

Kenneth D. Evans

Commissioner
Plant Variety Protection Office
Agricultural Marketing Service

Secretary of Agriculture

FORM APPROVED: OMB 0581-0055, Expires 1/31/91

U.S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE

APPLICATION FOR PLANT VARIETY PROTECTION CERTIFICATE

(Instructions on reverse)

Application is required in order to determine if a plant variety protection certificate is to be issued (7 U.S.C. 2421). Information is held confidential until certificate is issued (7 U.S.C. 2426).

1. NAME OF APPLICANT(S) *(as it is to appear on the Certificate)*
Idaho Agricultural Experiment Station

2. TEMPORARY DESIGNATION OR EXPERIMENTAL NO.
ID0360

3. VARIETY NAME
Meridian

4. ADDRESS *(street and no. or R.F.D. no., city, state, and ZIP)*
University of Idaho
Moscow, ID 83843

5. PHONE *(Include area code)*
(208)885-7173
(208)397-4162

FOR OFFICIAL USE ONLY

PVPO NUMBER
9300027

FILING Date: Nov. 17, 1992
Time: 1:00 ☐ A.M. ☑ P.M.

FEES RECEIVED Filing and Examination Fee: $ 2150. → Date: Nov. 16 1992
Certificate Fee: $ 250.00 Date: August 19, 1994

6. GENUS AND SPECIES NAME
Triticum aestivum

7. FAMILY NAME *(Botanical)*
Gramineae

8. CROP KIND NAME *(Common Name)*
Hard Red Winter

9. DATE OF DETERMINATION
9/1/85

10. IF THE APPLICANT NAMED IS NOT A "PERSON," GIVE FORM OF ORGANIZATION *(Corporation, partnership, association, etc.)*
State Land Grant Experiment Station

11. IF INCORPORATED, GIVE STATE OF INCORPORATION

12. DATE OF INCORPORATION

13. NAME AND ADDRESS OF APPLICANT REPRESENTATIVE(S), IF ANY, TO SERVE IN THIS APPLICATION AND RECEIVE ALL PAPERS

Dr. G. Lee, Director
IAES
University of Idaho
Moscow, ID 83843

Dr. E. Souza, Breeder
AREC
University of Idaho
Aberdeen, Idaho 83210

PHONE *(Include area code)*: (208)397-4162

AAA 26 Sept 1994 per letter

14. CHECK APPROPRIATE BOX FOR EACH ATTACHMENT SUBMITTED *(Follow INSTRUCTIONS on reverse)*

a. ☒ Exhibit A, Origin and Breeding History of the Variety.
b. ☒ Exhibit B, Novelty Statement.
c. ☒ Exhibit C, Objective Description of Variety.
d. ☒ Exhibit D, Additional Description of Variety.
e. ☒ Exhibit E, Statement of the Basis of Applicant's Ownership.
f. ☒ Seed Sample (2,500 viable untreated seeds). Date Seed Sample mailed to Plant Variety Protection Office _____.
g. ☐ Filing and Examination Fee ($2,150) made payable to "Treasurer of the United States."

X Exhibit F, Agronomic and Quality Data

15. DOES THE APPLICANT(S) SPECIFY THAT SEED OF THIS VARIETY BE SOLD BY VARIETY NAME ONLY AS A CLASS OF CERTIFIED SEED? *(See section 83(a) of the Plant Variety Protection Act.)*
☐ YES *(If "YES," answer items 16 and 17 below)* ☒ NO *(If "NO," skip to item 18 below)* AAA 26 Sept 1994 per letter

16. DOES THE APPLICANT(S) SPECIFY THAT THIS VARIETY BE LIMITED AS TO NUMBER OF GENERATIONS?
☐ YES ☐ NO

17. IF "YES" TO ITEM 16, WHICH CLASSES OF PRODUCTION BEYOND BREEDER SEED?
☐ FOUNDATION ☐ REGISTERED ☐ CERTIFIED

18. DID THE APPLICANT(S) PREVIOUSLY FILE FOR PROTECTION OF THE VARIETY IN THE U.S.?
☐ YES *(If "YES," through* ☐ Plant Variety Protection Act ☐ Patent Act. Give date: _____.)
☒ NO

19. HAS THE VARIETY BEEN RELEASED, USED, OFFERED FOR SALE, OR MARKETED IN THE U.S. OR OTHER COUNTRIES?
☐ YES (If "YES," give names of countries and dates)
☒ NO

20. The applicant(s) declare(s) that a viable sample of basic seeds of this variety will be furnished with the application and will be replenished upon request in accordance with such regulations as may be applicable.

The undersigned applicant(s) is (are) the owner(s) of this sexually reproduced novel plant variety, and believe(s) that the variety is distinct, uniform, and stable as required in section 41, and is entitled to protection under the provisions of section 42 of the Plant Variety Protection Act.

Applicant(s) is (are) informed that false representation herein can jeopardize protection and result in penalties.

SIGNATURE OF APPLICANT *(Owner(s))*	CAPACITY OR TITLE	DATE
Edward Souza	Breeder	10/27/92
SIGNATURE OF APPLICANT *(Owner(s))*	CAPACITY OR TITLE	DATE
Gary A. Lee	DIRECTOR, ID. AG. EXP. STATION	11-3-92

Exhibit A. Origin and Breeding History of Variety

Meridian is a pureline selection from the A75232W-3-2, a cross of A68231W-A-7-5-3 with a sib of the cultivar 'Neeley'. A68231W-A-7-5-3 was an Aberdeen winter wheat breeding line with the pedigree CNN// 7*LEE/TF/5/SM5/4/BURT/3/REX/ RIO//NBR and the Neeley sib was designated A71111W-5-1. A75232W-3 was an F_4 selection from an F_3 bulk population. A75232W-3 was given the designation IDO357 and tested in the Tri-State Hard Red Winter Wheat Nursery from 1987 to 1989. A head selection of a short plant was made from A75232W-3 was made in 1984 and designated A75232W-3-2. A75232W-3-2 was tested in advanced yield trials at Aberdeen, ID in 1985-86. In 1986-87, A75232W-3-2 was entered into the Tri-State Hard Red Winter Wheat Nursery as IDO360. In 1987-88, IDO360 was entered into the Western Regional Nursery. IDO360 was selected for uniform heading date in the spring of 1988. A uniform bulk of IDO360 was reentered into the Tri-State Hard Red Winter Wheat Nursery in 1988-89. In 1989-90, IDO360 was grown in the Western Regional Nursery. IDO360 was grown in Southern Idaho Extension Trials for three seasons from 1988-89 to 1990-91. Seed from two hundred heads were grown in individual headrows in 1989-90. Three bulk composites of approximately 50 headrows each were grown in 1990-91 at Aberdeen. The bulk composites were designated as breeder's seed for Meridian hard red winter wheat. Meridian has been inbred for 16 generations, eight of those generations as pureline A75232W-3-2. Meridian has remained uniform through four generations of testing since 1987-88.

Exhibit B.

Meridian is a semi-dwarf winter wheat derived from a cross to a sister line of the cultivar 'Neeley' (see exhibit A). It most closely resembles the hard red winter wheat cultivar 'Neeley'. Meridian can be distinguished from Neeley on the basis of mature plant height, grain test weight, and lodging resistance. Meridian is signficantly shorter, lower in test weight, and less prone to lodging than the cultivar Neeley (See Exibit B, Table 1). The difference between cultivars for these three traits was found to have little (non-significant) interaction with the year in which the cultivars were compared (Exhibit B, Table 2).

Exhibit B, Table 1. Comparison of Meridian to Neeley in cultivar trials grown at Aberdeen ID, 1986 to 1992; Comparison of means.

Name	Plant height	Grain test weight	Lodging score
	in	lb bu^{-1}	1 to 9[1]
Meridian	38.5[2]	61.4	1.6
Neeley	43.3	62.2	3.2

1. Lodging score: 1=no lodging, 9=100% lodging.
2. For test of significance between cultivars see Table 1b, 'Cultivar Mean Squares'.

Exhibit B, Table 2. Comparison of Meridian to Neeley in cultivar trials grown at Aberdeen ID, 1986 to 1992; Analysis of variance.

Source	df	Plant height mean square	Grain test weight mean square	Lodging score mean square	MANOVA Wilks' Lambda[1]
Year	6	7.4	6.2	4.1	
Trial	6	11.0	0.4	2.4	
Yr*Trial	2	6.1	2.3	3.2	
Cultivar	1	149.9**	3.8*	23.8**	0.025**
Yr*Cultivar	6	4.8	0.6	1.9	
Residual	11	5.0	1.3	0.9	

, Mean square term for Cultivars or Year*Cultivars significant at the 95% and 99% confidence interval, respectively, using the Year*Cultivar mean square term as an error estimate for Cultivars and the Residual mean square term as the error estimate for Year*Cultivar.
1. Multivariate analysis of height, test weight, and lodging, testing the null hypothesis of identical cultivars using the Year*Cultivar interaction as an error term.

FORM APPROVED: OMB NO. 0581-0055

U.S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE
LIVESTOCK AND SEED DIVISION
BELTSVILLE, MARYLAND 20705

EXHIBIT C
(Wheat)

OBJECTIVE DESCRIPTION OF VARIETY
WHEAT (*TRITICUM SPP.*)

INSTRUCTIONS: *See Reverse.*

NAME OF APPLICANT(S)
Idaho Agricultural Experiment Station

ADDRESS (*Street and No. or R.F.D. No., City, State, and ZIP Code*)
University of Idaho
Moscow, Idaho 83843

FOR OFFICIAL USE ONLY

PVPO NUMBER
9300027

VARIETY NAME OR TEMPORARY DESIGNATION
Meridian (ID0360)

Place the appropriate number that describes the varietal character of this variety in the boxes below.
Place a zero in first box (e.g. [0][8][9] or [0][9]) when number is either 99 or less or 9 or less.

1. KIND:

[1] 1 = COMMON 2 = DURUM 3 = EMMER 4 = SPELT 5 = POLISH 6 = POULARD 7 = CLUB

2. TYPE:

[2] 1 = SPRING 2 = WINTER 3 = OTHER (*Specify*) _____ [2] 1 = SOFT 2 = HARD 3 = OTHER (*Specify*) _____

[2] 1 = WHITE 2 = RED 3 = OTHER (*Specify*) _____

3. SEASON - NUMBER OF DAYS FROM EMERGENCE TO:

[1][4][9] FIRST FLOWERING Days after Jan. 1st [1][5][4] LAST FLOWERING

4. MATURITY (*50% Flowering*):

[0][2] NO. OF DAYS *EARLIER* THAN Neeley [ ] 1 = ARTHUR 2 = SCOUT 3 = CHRIS

[0][1] NO. OF DAYS *LATER* THAN Nugaines [ ] 4 = LEMHI 5 = NUGAINES 6 = LEEDS

5. PLANT HEIGHT (*From soil level to top of head*):

[0][9][3] CM. HIGH

[1][5] CM. TALLER THAN Ute [ ]

[0][8] CM. SHORTER THAN Neeley [ ] 1 = ARTHUR 2 = SCOUT 3 = CHRIS 4 = LEMHI 5 = NUGAINES 6 = LEEDS

6. PLANT COLOR AT BOOTING (*See reverse*):

[3] 1 = YELLOW GREEN 2 = GREEN 3 = BLUE GREEN

7. ANTHER COLOR:

[1] 1 = YELLOW 2 = PURPLE

8. STEM:

[2] Anthocyanin: 1 = ABSENT 2 = PRESENT

[2] Hairiness of last internode of rachis: 1 = ABSENT 2 = PRESENT

[0][4] NO. OF NODES (*Originating from node above ground*)

[1] Waxy bloom: 1 = ABSENT 2 = PRESENT

[1] Internodes: 1 = HOLLOW 2 = SOLID

[2][9] CM. INTERNODE LENGTH BETWEEN FLAG LEAF AND LEAF BELOW

9. AURICLES:

[2] Anthocyanin: 1 = ABSENT 2 = PRESENT

[2] Hairiness: 1 = ABSENT 2 = PRESENT

10. LEAF:

[1] Flag leaf at booting stage: 1 = ERECT 2 = RECURVED 3 = OTHER (*Specify*): _____

[1] Flag leaf: 1 = NOT TWISTED 2 = TWISTED

[1] Hairs of first leaf sheath: 1 = ABSENT 2 = PRESENT

[1] Waxy bloom of flag leaf sheath: 1 = ABSENT 2 = PRESENT

[2][6] MM. LEAF WIDTH (*First leaf below flag leaf*)

[2][6] CM. LEAF LENGTH (*First leaf below flag leaf*):

9300027

11. HEAD:

[1] Density: 1 = LAX 2 = DENSE

[2] Shape: 1 = TAPERING 2 = STRAP 3 = CLAVATE 4 = OTHER (Specify) _____

[4] Awnedness: 1 = AWNLESS 2 = APICALLY AWNLETED 3 = AWNLETED 4 = AWNED

[1] Color at maturity: 1 = WHITE 2 = YELLOW 3 = PINK 4 = RED 5 = BROWN 6 = BLACK 7 = OTHER (Specify): _____

[0][8] CM. LENGTH [1][0] MM. WIDTH

12. GLUMES AT MATURITY:

[2] Length: 1 = SHORT (CA. 7 mm.) 2 = MEDIUM (CA. 8 mm.) 3 = LONG (CA. 9 mm.)

[3] Width: 1 = NARROW (CA. 3 mm.) 2 = MEDIUM (CA. 3.5 mm.) 3 = WIDE (CA. 4 mm.)

Basal florets – Glume shoulders wanting. Mid to terminal florets – shoulders square

[ ] Shoulder shape: 1 = WANTING 2 = OBLIQUE 3 = ROUNDED 4 = SQUARE 5 = ELEVATED 6 = APICULATE

[3] Beak: 1 = OBTUSE 2 = ACUTE 3 = ACUMINATE

13. COLEOPTILE COLOR:

[1] 1 = WHITE 2 = RED 3 = PURPLE

14. SEEDLING ANTHOCYANIN:

[1] 1 = ABSENT 2 = PRESENT

15. JUVENILE PLANT GROWTH HABIT:

[1] 1 = PROSTRATE 2 = SEMI-ERECT 3 = ERECT

16. SEED:

[3] Shape: 1 = OVATE 2 = OVAL 3 = ELLIPTICAL

[2] Cheek: 1 = ROUNDED 2 = ANGULAR

[2] Brush: 1 = SHORT 2 = MEDIUM 3 = LONG

[1] Brush: 1 = NOT COLLARED 2 = COLLARED

[ ] Phenol reaction (See instructions): 1 = IVORY 2 = FAWN 3 = LT. BROWN 4 = BROWN 5 = BLACK

[3] Color: 1 = WHITE 2 = AMBER 3 = RED 4 = PURPLE 5 = OTHER (Specify) _____

[1][0] MM. LENGTH [0][3] MM. WIDTH [3][6] GM. PER 1000 SEEDS

17. SEED CREASE:

[2] Width: 1 = 60% OR LESS OF KERNEL 'WINOKA' 2 = 80% OR LESS OF KERNEL 'CHRIS' 3 = NEARLY AS WIDE AS KERNEL 'LEMHI'

[2] Depth: 1 = 20% OR LESS OF KERNEL 'SCOUT' 2 = 35% OR LESS OF KERNEL 'CHRIS' 3 = 50% OR LESS OF KERNEL 'LEMHI'

18. DISEASE: (0 = Not Tested, 1 = Susceptible, 2 = Resistant)

[2] STEM RUST (Races) PNW Races

[2] LEAF RUST (Races) PNW Races

[1] Races of Palouse

[2] STRIPE RUST (Races) S.E. Idaho

[0] LOOSE SMUT

[0] POWDERY MILDEW

[1] BUNT (T. controversa)

[1] OTHER (Specify) 2 = Snow mold, Typhula spp. Septoria spp.

19. INSECT: (0 = Not Tested, 1 = Susceptible, 2 = Resistant)

[0] SAWFLY

[1] APHID (Bydv.)

[0] GREEN BUG

[0] CEREAL LEAF BEETLE

[1] OTHER (Specify) Diuraphis noxia

HESSIAN FLY RACES: [0] GP [ ] A [ ] B [ ] C [ ] D [ ] E [ ] F [ ] G

20. INDICATE WHICH VARIETY MOST CLOSELY RESEMBLES THAT SUBMITTED:

CHARACTER	NAME OF VARIETY	CHARACTER	NAME OF VARIETY
Plant tillering	Neeley	Seed size	Blizzard
Leaf size	Neeley	Seed shape	Blizzard
Leaf color	Neeley	Coleoptile elongation	Neeley
Leaf carriage	Neeley	Seedling pigmentation	Neeley

INSTRUCTIONS

GENERAL: The following publications may be used as a reference aid for the standardization of terms and procedures for completing this form:

(a) L.W. Briggle and L. P. Reitz, 1963, Classification of Triticum Species and Wheat Varieties Grown in the United States, Technical Bulletin 1278, United States Department of Agriculture.

(b) W.E. Walls, 1965, A Standardized Phenol Method for Testing Wheat Seeds for Varietal Purity, contribution No. 28 to the handbook of seed testing prepared by the Association of Official Seed Analysts. (See attachment.)

Exhibit C. Objective Description of Variety

Meridian is a semi-dwarf winter wheat most similar in appearance to the cultivar Neeley. Meridian is 2 d earlier than Neeley and 1 d later than 'Nugaines'. Meridian is 8 cm shorter than Neeley and 15 cm taller than 'Ute'. Meridian has a prostrate, dark green, juvenile vegetation. Meridian has dark green leaves at flowering without a waxy bloom. The cultivar's flag leaf is erect and broad with light anthocyanin auricle pigmentation. Meridian's spike is mid-dense and awned. The basal florets of Meridian's spike have glumes with wanting shoulders. The shoulder shape becomes more elevated in apical florets; terminal florets have square shoulders. The glumes are glabrous with acuminate beaks. The chaff color of Meridian is white. Meridian's kernels are elliptical with angular cheeks, a mid-deep crease, and a mid-long brush. Meridian is moderately resistant to stripe rust (*Puccinia striiformis*, Westend.) field races at Aberdeen and susceptible to field races at Pullman, WA. Meridian is moderately susceptible to dwarf bunt (*Tilletia controversa*, Kuhn) and moderately resistant to snow mold (*Typhula* spp.). Meridian is susceptible to the Russian wheat aphid (*Diuraphis noxia*, Mordv.). Meridian's plant type is uniform for all measured field characters. Seed color variants exist within the variety. Meridian may have up to 2 white kernels per 10 lbs of seed.

9300027

IDAHO AGRICULTURAL EXPERIMENT STATION
UNIVERSITY OF IDAHO
Moscow, Idaho

and

UNITED STATES DEPARTMENT OF AGRICULTURE
AGRICULTURAL RESEARCH SERVICE
Washington, D.C.

Release of MERIDIAN Hard Red Winter Wheat

The Idaho Agricultural Experiment Station and the United States Department of Agriculture, Agricultural Research Service announce the release of 'Meridian' hard red winter wheat. Meridian was developed for irrigated cereal production areas along the Snake River Plain of Idaho.

Meridian is a pureline selection from the A75232W-3-2, a cross of A68231W-A-7-5-3 with a sib of the cultivar 'Neeley'. A68231W-A-7-5-3 was an Aberdeen winter wheat breeding line with the pedigree 'CHEYENNE'//7*'LEE'/'TRANSFER'/5/SM5/4/'BURT'/3/'REX'/'RIO'//'NEBRED' and the Neeley sib was designated A71111W-5-1. A75232W-3 was an F_4 selection from an F_3 bulk population. A75232W-3 was given the designation IDO357 and tested in the Tri-State Hard Red Winter Wheat Nursery from 1987 to 1989. A head selection of a short plant was made from A75232W-3 in 1984 and designated A75232W-3-2. A75232W-3-2 was tested in advanced yield trials at Aberdeen, ID in 1985-86. In 1986-87, A75232W-3-2 was entered into the Tri-State Hard Red Winter Wheat Nursery as IDO360. In 1987-88, IDO360 was entered into the Western Regional Nursery. IDO360 was re-selected for uniform heading date in the spring of 1988. A uniform bulk of IDO360 was reentered into the Tri-State Hard Red Winter Wheat Nursery in 1988-89. In 1989-90, IDO360 was grown in the Western Regional Nursery. IDO360 was grown in Southern Idaho Extension Trials for three seasons from 1988-89 to 1990-91. Seed from two hundred heads were grown in individual headrows in 1989-90. Three bulk composites of approximately 50 headrows each were grown in 1990-91 at Aberdeen. The bulk composites were designated as breeder's seed for Meridian hard red winter wheat.

Meridian is a semi-dwarf winter wheat most similar in appearance to the cultivar Neeley. Meridian is 2 d earlier than Neeley and 1 d later than 'Nugaines'. Meridian is 8 cm shorter than Neeley and 15 cm taller than 'Ute'. Meridian has a prostrate, dark green, juvenile vegetation. Meridian has dark green leaves at flowering without a waxy bloom. The cultivar's flag leaf is erect and broad with a light anthocyanin pigmentation of the auricles. Meridian's spike is mid-dense and awned. The basal florets of Meridian's spike have glumes with wanting shoulders. The shoulder shape becomes more elevated in apical florets; terminal florets have square shoulders. The glumes are glabrous with acuminate beaks. The chaff color of Meridian is white. Meridian's kernels are elliptical with angular cheeks, a mid-deep crease, and a mid-long brush. Meridian is moderately resistant to stripe rust (*Puccinia striiformis*, Westend.) field races at

7

Aberdeen and susceptible to field races at Pullman, WA. Meridian is moderately susceptible to dwarf bunt (*Tilletia controversa*, Kuhn) and moderately resistant to snow mold (*Typhula* spp.). Meridian is susceptible to the Russian wheat aphid (*Diuraphis noxia*, Mordv.).

In intensively managed irrigated yield trials from 1986 to 1991 at Aberdeen, Meridian, Ute, 'Stephens', and 'Madsen' have had average yields of 8.7, 8.5, 8.1, 8.4, and 8.7 Mg ha^{-1}, respectively. In the same trials the seed weight per volume of Meridian, Ute, Stephens, and Madsen was 792, 771, 755, 767 g l^{-1}, respectively. In 2 yr of Tri-State testing yields of Meridian averaged 6.8 Mg ha^{-1}, Stephens averaged 7.4 Mg ha^{-1}, and Neeley averaged 5.5 Mg ha^{-1}. In 3 yr of extension trials in southern Idaho, Meridian had an average yield of 7.8 Mg ha^{-1} and Ute an average yield of 7.3 Mg ha^{-1}. In 16 of the 19 (85%) extension trials, Meridian had higher yields than Ute. The test weight of Meridian in extension trials was consistently higher than Ute (95% of trials) with an averages of 797 g l^{-1} and 769 g l^{-1}, respectively. Meridian is more susceptible to lodging than Ute, similar to 'Daws', Nugaines, and 'Dusty', and superior to Neeley. In 13 of 17 southern Idaho extension trials, Meridian had identical or better lodging scores to Ute. Winter hardiness of Merdian is comparable to other hard red winter wheats adapted to southeastern Idaho and superior to Stephens. Meridian had an average spring stand of 96% and Stephens had an average spring stand of 59% in 6 location/yr of trials where low-temperature winter injury occured. Meridian has good milling, excellent mixing, and acceptable baking characteristics. In 2 yr of trials in the Western Regional Nursery, Meridian had optimum dough mixing times 0.3 min longer than 'Wanser', 0.4 min longer than 'Judith', and 0.7 min longer than 'Buchanan'. In the same trials, Meridian, Wanser, Judith, and Buchanan had times to Farinograph peaks of 9.4, 8.8, 9.9, and 6.9 min, respectively. The same cultivars had Farinograph stability times of 16.0, 10.4, 16.8, and 8.6 min, respectively. Meridian had a 0.4 min longer dough mixing time than Ute in trials at Aberdeen from 1987 to 1989. Meridian also had superior dough mixing tolerance to Ute in the same trials (72 vs. 64 degrees). Loaf volume of Meridian is similar to Neeley but smaller than Ute in trials at Aberdeen with corrected loaf volumes of 843 ml, 863 ml, and 937 ml, respectively.

Foundation seed of Meridian will be maintained by the Idaho Agricultural Experiment Station. Seed may be obtained by writing to the Foundation Seed Director, IAES, University of Idaho, Moscow, ID. The date of final signature will serve as the date of official release.

_____ _____

Director
Idaho Agricultural Experiment Station
University of Idaho, Moscow, ID

Date

_____ _____

Administrator
United States Department of Agriculture,
Agricultural Research Service
Washington D.C.

Date

Exhibit C. Additional Description of Variety

Table 1. Irrigated winter wheat performance at Aberdeen, 1986 to 1990.

Cultivar	Mkt class	Grain yield	Std err	Test weight	Heading date	Height	Straw strength*	Lodging*
		bu/ac	bu/ac	#/bu		in	1 - 5	1 - 9
Meridian	HRW	117.9	3.2	60.9	8-Jun	37.8	3.3	1.7
UTE	HRW	112.1	3.8	59.3	8-Jun	30.4	3.0	1.0
NEELEY	HRW	108.5	2.6	61.7	10-Jun	42.2	3.3	3.3
MALCOLM	SWW	125.0	4.2	58.0	6-Jun	38.0	2.4	1.0
MADSEN	SWW	123.2	4.8	59.3	10-Jun	39.2	2.2	1.2
STEPHENS	SWW	115.8	2.4	58.2	5-Jun	36.0	2.8	1.2

* Straw score: 1=stiff, 5=weak. Lodging: 1=erect, 9=100% lodged

** Not all cultivars grown in all trials within a year, missing data estimated by least squares method.

Table 2. Comparison of yield and test weight between Meridian and Ute in yield trials at Aberdeen, 1987 to 1991.

Trial year	Trial number	- Grain Yield - Meridian	Ute	- Test Weight - Meridian	Ute	- Lodging Scores - Meridian	Ute
		bu/ac	bu/ac	lb/bu	lb/bu	1 to 9	1 to 9
1987	10	***138.3***	114.0	***62.3***	58.8	1.5	***1.0***
1987	15	***128.5***	127.7	***60.6***	58.3	3.5	***1.0***
1987	16	***120.7***	115.6	***60.8***	59.0	4.5	***1.0***
1988	10	***97.3***	95.9	***63.0***	62.0	1.0	1.0
1988	15	***124.5***	93.6	***64.0***	63.5	1.0	1.0
1989	10	***143.4***	139.9	***60.8***	59.2	2.0	***1.0***
1989	11	***152.6***	145.3	***61.3***	60.1	1.0	1.0
1989	14	***138.6***	136.5	***61.5***	59.8	1.5	***1.0***
1990	14	135.8	***141.1***	59.5	***59.7***	1.0	1.0
1990	15	***144.7***	130.3	***60.3***	59.0	1.0	1.0
1991	13	***100.9***	95.8	***62.5***	60.9	1.0	1.0
1991	18	179.7	***180.7***	***62.1***	59.3	1.0	1.0
1991	19	***187.4***	170.1	***62.9***	61.1	1.0	1.0
Average		137.9	129.7	61.7	60.1	1.6	1.0

1. The cultivar with the superior rank for each comparison has bolded values.

Table 3. Comparison of Meridian and Ute in Southern Idaho irrigated extension trials 1989 to 199

Year	Location	- Grain Yield -		- Test Weight -		- Lodging -	
		Meridian	Ute	Meridian	Ute	Meridian	Ute
		bu/ac	bu/ac	lb/bu	lb/bu	%	%
1989	Parma	***145***	130	***62.3***	60.5	0	0
1990	Parma	122	***131***	***59.7***	58.6	30	***0***
1991	Parma	***109***	101	***61.6***	60.1	0	0
1989	Grandview	***155***	134	***61.8***	60.3	0	0
1990	Grandview	118	118	***62.7***	61.4	45	***0***
1989	Saylor Creek	***156***	144	***62.9***	61.1	***10***	12
1990	Emmett	***127***	117	***62.7***	59.2	0	0
1991	Hammett	***121***	113	61.1	***61.6***	10	***0***
1989	Payette	***88***	75	***64.0***	60.6	0	0
1990	Wieser	***71***	62	***59.9***	57.6	0	0
1991	New Plymouth	***94***	81	***60.9***	58.4	0	0
1989	Kimberly	***112***	97	***62.3***	59.8	0	0
1989	Gooding	***132***	130	***60.4***	57.4	0	0
1991	Jerome	***124***	119	***63.4***	62.1	0	0
1989	Dietrich	***96***	90	***60.3***	58.4	0	0
1990	Dietrich	59	***59***	***61.5***	59.4	-	-
1990	Carey	***116***	94	***60.3***	59.1	-	-
1990	Burley	***139***	114	***61.3***	58.0	17	***0***
1991	Rupert	***129***	126	***62.2***	60.9	0	0
Averages		116	107	61.6	59.7	7	1

Table 4. Performance of hard red winter wheats from 1985 to 1990 at southeastern Idaho locations, sorted by weighted rank summary. Not all entries grown in all years

NAME	No. yrs. grown	Bunt resist.	Rockland grain yield bu/ac*	Rockland std error	Rockland Rnk	Rockland test weight #/bu	Preston grain yield bu/ac	Preston std error	Preston Rnk	Preston test weight #/bu	Tetonia grain yield bu/ac	Tetonia std error	Tetonia Rnk	Tetonia test weight #/bu	Spring stand %	Weighted Spring stand %	Stand rank	Yield FW stability ave=1	Yield rank sum	Twt rank sum	Stability rank sum	Weighted rank	NAME
Meridian	**4**	**MR**	**39.7**	**3.3**	**46**	**59.6**	**31.7**	**1.7**	**37**	**59.4**	**55.9**	**2.6**	**27**	**59.7**	**53.9**	**58.0**	**44**	**0.895**	**38**	**41**	**14**	**45**	**Meridian**
Andrews	3	MS	42.1	3.3	35	60.4	27.4	3.3	56	59.4	41.0	4.8	57	58.6	65.1	78.7	2	0.800	53	42	46	48	Andrews
Blizzard	6	R	45.5	1.6	17	61.0	32.6	1.0	27	60.0	54.7	1.4	32	60.1	59.9	66.8	18	1.000	23	25	22	18	Blizzard
Buchanan	4	S	46.6	3.3	13	59.5	32.3	2.3	29	58.6	51.7	3.9	43	58.2	58.3	62.5	37	1.060	30	58	35	49	Buchanan
Jeff	6	MR	39.6	2.4	47	61.5	28.5	1.9	53	60.3	44.9	2.8	54	60.9	55.0	57.1	48	0.908	55	13	31	44	Jeff
John	2	S	36.8	5.7	55	59.8	36.3	4.7	6	57.9	16.8	6.7	60	55.1	56.9	71.9	6	0.389	44	60	38	50	John
Judith	4	S	40.2	4.0	44	58.2	29.6	3.3	48	58.1	36.8	6.6	59	59.8	46.4	1.0	60	0.969	54	54	53	59	Judith
Kharkof	6	S	32.4	3.3	60	61.5	24.0	2.7	60	60.4	42.2	3.9	56	59.3	53.1	47.7	59	0.810	60	26	24	53	Kharkof
Manning	6	MR	43.2	0.9	26	60.6	35.1	0.8	10	59.2	58.1	1.1	16	59.6	58.0	54.3	55	0.998	12	38	36	37	Manning
Neeley	6	S	41.9	1.5	39	60.3	37.5	1.6	4	59.4	57.8	2.3	17	59.8	52.3	56.3	53	0.767	15	37	18	27	Neeley
Promontory	3	MR	43.9	4.0	23	61.7	31.2	2.7	39	61.0	61.3	4.7	5	61.4	60.4	64.8	24	1.059	18	5	5	2	Promontory
Sprague	5	S	48.8	1.5	7	59.7	33.7	1.2	19	57.6	55.5	1.7	30	58.7	62.2	79.9	1	1.002	13	57	37	31	Sprague
Survivor	6	MR	41.2	1.3	41	59.9	30.2	0.9	47	59.1	48.5	1.2	50	59.5	59.2	71.3	8	0.806	50	43	42	47	Survivor
Wanser	6	S	42.6	3.3	30	61.9	29.4	2.7	50	60.4	48.0	3.9	51	59.7	51.7	50.9	56	0.939	48	19	20	42	Wanser
Weston	6	R	45.0	0.9	18	61.8	33.7	0.9	20	61.5	54.4	1.1	33	61.4	58.2	56.5	52	0.937	21	4	11	8	Weston
IDO352	6	R	47.7	2.4	9	61.5	33.4	1.7	22	60.3	59.2	2.4	12	60.4	60.3	64.8	25	0.900	11	18	2	3	IDO352
IDO355	5	MS	50.4	2.6	3	60.6	37.8	2.1	3	59.7	61.0	2.8	6	60	60.8	60.6	42	0.959	3	31	4	10	IDO355
IDO380	4	R	40.6	4.1	43	61.3	28.4	2.1	54	59.7	57.5	3.4	20	60.8	62.8	66.1	21	1.110	41	21	33	31	IDO380
IDO381	5	R	46.3	2.4	14	60.3	31.9	1.7	34	60.1	53.5	2.4	36	59.7	62.5	63.7	29	0.960	29	33	28	33	IDO381
IDO390	2	S	38.9	5.8	49	59.1	33.3	4.7	23	56.7	53.8	7.0	35	60.2	60.2	62.3	38	0.942	37	49	55	55	IDO390
IDO421	5	R	44.9	2.6	19	61.0	31.2	2.1	38	61.0	53.0	3.0	38	61	58.0	68.0	15	1.050	33	12	30	17	IDO421
IDO422	5	MS	47.7	2.6	8	58.4	34.2	2.1	15	58.9	59.0	3.0	13	59.9	57.9	67.5	16	1.210	7	47	53	30	IDO422
IDO433	5	R	51.0	2.9	2	61.6	31.9	2.4	33	59.8	56.7	3.4	22	60.7	59.1	74.2	3	0.966	14	17	23	5	IDO433
MT79125	4	S	38.8	3.3	51	58.5	26.8	2.3	58	58.8	43.4	3.9	55	58.1	56.6	56.7	51	0.953	58	59	52	60	MT79125
UT157140	3	R	43.7	4.0	25	59.8	28.1	2.7	55	58.4	53.4	4.7	37	58.8	52.2	50.1	57	1.160	41	55	45	58	UT157140
Average	4.7		43.2	2.9		60.4	31.6	2.2		59.4	51.1	3.4		59.7	57.6	60.5		0.9					

* Yield and test weight adjusted by common entries using the least squares method.

** Weighted stand means used Proc GLM with observations given a weight equal to 1/m*m where 'm' is the stand of Manning for the trial.

^^ Weighted rank=(2*yld rank + 2* twt rank + stability rank + weighted stand rank)

13

Table 5. Spring stands of Meridian in nursery where low temperature winter injury occured.

			--- Spring Stand Score ---		
Year	Trial No.	Location	Meridian	Stephens	Nugaines
			%	%	%
1985-86	19	Aberdeen	98	48	
1986-87	15	Aberdeen	100	85	75
1987-88	10	Rockland	80	48	
1990-91	10	Tetonia	100	50	75
1990-91	18	Aberdeen	100	65	100
1990-91	Extension	Rupert	100	60	80
Average			96	59	

Table 6. Milling and baking data for Hard Red Winter Wheat grown under intensive management at Aberdeen ID, 1987 to 1990.

Name	Flour protein	Milling yield	--- Mixograph --- peak	height	tolerance	Bake absorption	Mix time	Loaf volume	Corrected LV	Exterior texture	Interior texture
	%	%	min	cm	degree	%	min	ml	ml	0 - 4	0 - 4
MERIDIAN	**11.4**	**62.6**	**3.0**	**5.3**	**72.0**	**65.1**	**2.5**	**830**	**843**	**2.6**	**2.5**
UTE	11.6	66.6	3.0	5.9	63.8p	64.9	2.1	944	937	3.1	2.1
MANNING	11.9	64.4	2.9	5.5	71.9	65.1	2.4	986	960	2.6	2.6
NEELEY	12.0	63.8	2.7	5.5	73.6	65.1	2.4	896	863	2.8	2.5
IDO361	10.8	62.9	3.1	5.1	72.2	64.8	2.4	766	818	2.6	2.3
IDO384	11.4	62.9	3.1	5.2	69.9	65.2	2.2	778	791	2.5	2.2
IDO390	10.3	64.0	2.4	6.0	66.1	65.2	2.1	833	932	2.3	2.2

9/

Table 7. Milling and baking data for Hard Red Winter Wheat grown at Preston 1988 to 1990 and Rockland 1989 to 1990

Name	Flour protein	Milling yield	--- Mixograph --- peak	height	tolerance	Bake absorption	Mix time	Loaf volume	Corrected LV	Exterior texture	Interior texture
	%	%	min	cm	degree	%	min	ml	ml	0 - 4	0 - 4
MERIDIAN	**12.8**	**60.6**	**4.0**	**5.5**	**76.4**	**61.7**	**3.5**	**869**	**900**	**2.3**	**2.2**
BUCHANAN	12.0	60.5	3.0	5.8	60.0	61.5	2.4	920	1009	2.3	2.5
BLIZZARD	12.4	64.6	3.2	5.2	69.8	61.5	2.5	865	918	2.2	2.1
JUDITH	12.8	59.9	3.3	6.6	69.1	61.9	3.1	1010	1024	2.5	2.1
KHARKOF	13.0	59.1	2.7	5.9	68.2	61.7	2.3	952	946	2.4	2.4
MANNING	12.6	58.9	3.6	5.8	74.0	62.0	3.1	1004	1041	2.3	2.2
SURVIVOR	12.5	64.4	2.9	5.6	71.0	61.9	2.2	877	919	2.5	2.5
WANSER	12.4	61.5	3.6	5.7	72.0	61.3	3.1	968	1009	2.5	2.4
WESTON	13.1	59.7	2.1	6.4	59.9	61.5	1.7	1023	1008	2.6	1.8

Table 8. Yield of Meridian in the Western Regional Nursery, 1987-88.

Location	Meridian	Promontory	ORCR8313	Judith	Buchanan	Wanser	Kharkof	Yield of local ck.	Ck. Name
	bu/ac	bu/ac	bu/ac	bu/ac	bu/ac	bu/ac	bu/ac	bu/ac	
Moscow, ID	112	149	129	128	99	115	70	94	Winridge
Hermiston, OR	97	112	116	119	67	71	84	116	Orcr8313
Lind, WA, Irr.	104	108	94	97	94	90	70	94	Orcr8313
Kalispell, MT	82	97	86	88	77	75	66	88	Judith
Corvallis, OR	54	82	81	99	49	68	39	81	Orcr8313
Pendleton, OR	84	91	77	82	43	45	34	77	Orcr8313
Moro, OR	75	73	67	61	71	58	41	67	Orcr8313
Pullman, WA, Hi fert.	77	73	47	80	66	49	45	64	Dusty
Pullman, WA, Med. Fert.	56	74	64	59	64	71	36	57	Lewjain
Bonners Ferry, ID	51	58	27	68	62	37	39	58	Weston
Pomeroy, WA	48	50	54		37	47	37	37	Buchanan
Bozeman, MT	46	49	54	37	34	31	32	37	Judith
Blue Creek, UT	32	42	39	33	36	41	30	42	Promontory
Tetonia, ID	33	41	35		26	32	27	40	Survivor
Lind, WA, dry	25	22	23	24	26	26	21	26	Buchanan
Preston, ID	15	16	16		14	16	17	20	Survivor
% of Kharkof	1.422	1.624	1.443	1.612	1.256	1.274	1.000	1.458	
% of Local Ck.	0.986	1.115	1.001	1.057	0.879	0.890	0.713	1.000	

17

81

Table 9. Yield of Meridian in the Western Regional Nursery, 1989-90.

	Meridian	Judith	Buchanan	Wanser	Kharkof	Local Ck	Ck. Name
	bu/ac	bu/ac	bu/ac	bu/ac	bu/ac	bu/ac	bu/ac
Moscow, ID	109	124	83	102	75	125	Orcr8601
Hermiston, OR	107	61	29	49	45	59	Orcr8601
Lind, WA, Irr.	80	82	74	56	37	79	Batum
Kalispell, MT	95	92	62	68	46	92	Judith
Corvallis, OR	59	81	72	77	33	118	Orcr8601
Pullman, WA	64	36	47	27	26	86	VH87066
Bonners Ferry, ID	92	108	90	104	100	111	Orcr8601
Bozeman, MT	28	33	27	23	20	23	Tiber
Blue Creek, UT	47	45	42	45	36	48	UT157140
Tetonia, ID	60	34	55	43	37	51	Blizzard
Lind, WA, dry	26	32	30	30	30	35	Batum
Preston, ID	34	28	23	27	19	32	Blizzard
Rockland, ID	35	33	41	42	29	39	Blizzard
% of Kharkof	1.569	1.481	1.269	1.303	1.000	1.688	
% of Local Ck.	0.930	0.877	0.752	0.772	0.592	1.000	

Table 10. Yield of Meridian in the Western Regional Nursery averaged for 1987-88 and 1989-90.

	Meridian	Judith	Buchanan	Wanser	Kharkof
	bu/ac	bu/ac	bu/ac	bu/ac	bu/ac
Moscow, ID	110	126	91	109	72
Hermiston, OR	102	90	48	60	64
Lind, WA, Irr.	92	89	84	73	53
Kalispell, MT	88	90	69	71	56
Corvallis, OR	56	90	61	73	36
Pullman, WA, Med. Fert.	60	47	55	49	31
Bonners Ferry, ID	71	88	76	70	69
Bozeman, MT	37	35	30	27	26
Blue Creek, UT	39	39	39	43	33
Tetonia, ID	47	17	40	38	32
Lind, WA, dry	25	28	28	28	26
Preston, ID	24	14	18	21	18
% of Kharkof	1.496	1.546	1.263	1.288	1.000
% of Local Ck.	0.958	0.967	0.816	0.831	0.653

Table 11. Test weight performance of Meridian in the Western Regional Nursery 1987-88 and 1989-90

Cultivar	Moscow ID	Hermiston OR	Lind Irr.	Kalispell MT	Pullman Hi. fert	Pullman Med. fert.	Bonners Ferry	Pomeroy WA	Bozeman MT	Blue Creek UT	Tetonia ID	Lind dryland	Preston ID	Rockland ID	Percent of Kharkof	Percent of Local Ck.
	lb/bu	lb/bu	lb/bu	lb/bu	lb/bu	lb/bu	lb/bu	lb/bu	lb/bu	lb/bu	lb/bu	lb/bu	lb/bu	lb/bu	%	%
1987-88																
Meridian	**63.8**	**60.4**	**62.7**	**56.9**	**61.8**	**62.1**	**64.0**	**63.1**	**56.0**	**54.5**	**58.9**	**62.6**	**60.5**		**1.00**	**1.01**
Promontory	65.7	62.8	64.9	59.0	62.8	56.0	68.8	62.0	58.0	56.2	60.7	62.2	61.5		1.02	1.02
ORCR8313	65.2	60.2	63.7	56.3	63.1	62.6	65.3	61.0	54.8	52.3	57.9	61.5	59.2		0.99	1.00
Judith	64.3	60.4	63.1	56.3	61.8	62.1	62.9		54.0	50.4		59.4			0.99	0.99
Buchanan	63.8	61.0	61.7	56.4	59.2	63.0	63.8	61.1	56.4	51.3	57.2	62.2	58.9		0.98	0.99
Wanser	65.7	62.1	63.1	59.6	63.0	62.9	65.7	62.0	60.4	55.7	58.9	61.5	59.9		1.02	1.02
Kharkof	63.1	61.9	62.6	59.0	62.7	63.1	63.2	61.5	59.2	52.4	58.4	60.7	60.0		1.00	1.01
Local Ck.	64.8	60.2	63.7	56.3	59.7	61.0	65.8	61.1	54.0	56.2	58.2	62.2	59.9		0.99	1.00
Ck. Name	Winridge	Orcr8313	Orcr8313	Judith	Dusty	Lewjain	Weston	Buchanan	Judith	Promonton	Survivor	Buchanan	Survivor			
1989-90																
Meridian	**63.2**	**59.0**	**60.2**	**61.0**		**59.1**	**59.3**		**58.6**	**58.0**	**58.5**	**62.8**	**56.0**	**54.3**	**1.01**	**1.01**
Judith	63.0	55.0	58.8	59.2		57.5	61.5		54.7	54.7	58.3	60.6	53.8	54.1	0.98	0.98
Buchanan	61.5	49.0	58.2	56.6		57.1	90.3		58.1	41.9	54.9	62.0	56.5	57.0	0.99	0.99
Wanser	64.0	54.0	59.2	60.9		60.1	64.8		58.8	59.0	56.8	63.0	58.2	59.6	1.01	1.01
Kharkof	63.4	57.0	59.2	58.9		58.5	60.5		61.8	54.1	56.5	63.0	58.2	57.2	1.00	1.00
Local Ck	65.5	53.0	56.9	59.2		59.4	62.6		62.9	55.5	59.5	61.1	56.7	55.7	1.00	1.00
Ck. Name	Orcr8601	Orcr8601	Batum	Judith		VH87066	Orcr8601		Tiber	Ut157140	Blizzard	Batum	Blizzard	Blizzard		
Average																
Meridian	**63.5**	**59.7**	**61.5**	**58.9**		**60.6**	**61.6**		**57.3**	**56.3**	**58.7**	**62.7**	**58.3**		**1.004**	**1.006**
Judith	63.6	57.7	61.0	57.7		59.8	62.2		54.4	52.6	29.2	60.0	26.9		0.982	0.983
Buchanan	62.7	55.0	60.0	56.5		60.1	77.1		57.3	46.6	56.1	62.1	57.7		0.987	0.989
Wanser	64.8	58.1	61.2	60.2		61.5	65.3		59.6	57.4	57.9	62.3	59.1		1.014	1.017
Kharkof	63.2	59.5	60.9	58.9		60.8	61.9		60.5	53.3	57.5	61.9	59.1		1.000	1.003

Table 12. Milling and baking results for Meridian in the Western Regional Nursery 1988 and 1990.

						---------- Farinograph ----------				
Year	Cultivar	Flour yield	Flour ash	Flour protein	Mixing time	Corrected absorb.	peak	stability	Loaf volume	Bread crumb
		%	%	%	min	%	min	min	cc	1 to 9
1988	**Meridian**	**70.5**	**0.28**	**11.4**	**3.4**	**62.1**	**7.0**	**12.0**	**870**	**6**
1988	Kharkov	67.6	0.38	13.1	2.0	61.5	5.9	10.6	1045	3
1988	Wanser	71.3	0.37	12.5	3.3	62.0	7.5	10.7	1040	2
1988	Buchanan	70.4	0.36	11.5	3.1	65.5	6.3	9.7	950	3
1988	Judith	71.8	0.38	12.4	3.0	64.8	7.6	14.2	1065	3
1988	ORCR8313	70.4	0.38	11.7	3.7	62.0	9.5	16.7	980	2
1988	Promontory	72.0	0.36	11.6	3.6	62.3	7.5	11.8	945	4
1988	Survivor	70.7	0.39	12.8	2.3	65.2	6.2	7.2	955	2
1990	**Meridian**	**69.0**	**0.36**	**12.6**	**4.4**	**65.2**	**11.7**	**20.0**	**870**	**4**
1990	Kharkof	68.1	0.40	14.3	2.6	68.4	5.5	6.0	965	3
1990	Wanser	72.4	0.37	13.5	3.9	67.2	10.0	10.1	960	3
1990	Buchanan	71.1	0.35	12.9	3.2	69.5	7.5	7.5	905	4
1990	Judith	70.3	0.36	13.2	3.9	65.6	12.1	19.3	1000	3
1990	Andrew	68.2	0.36	12.9	3.4	64.1	10.6	14.2	940	4
Ave	**Meridian**	**69.8**	**0.32**	**12.0**	**3.9**	**63.7**	**9.4**	**16.0**	**870**	**5**
Ave	Kharkof	67.9	0.39	13.7	2.3	65.0	5.7	8.3	1005	3
Ave	Wanser	71.9	0.37	13.0	3.6	64.6	8.8	10.4	1000	3
Ave	Buchanan	70.8	0.36	12.2	3.2	67.5	6.9	8.6	928	4
Ave	Judith	71.1	0.37	12.8	3.5	65.2	9.9	16.8	1033	3
Average 1988 & 1990		70.2	0.36	12.7	3.3	64.9	8.4	12.2	961	3.3

Table 13. Summary of the performance of Meridian in the Tri-State Hard Red Winter Wheat Trials, 1987 and 1989.

	Aberdeen 1987	Aberdeen 1989	Corvallis 1987	Pendelton 1989	Hermiston 1987	Hermiston 1989	Lind 1987	Ontario 1987	Average all data	Average w/ 8313
Yield	**bu/ac**	**bu/ac**	**bu/ac**	**bu/ac**	**bu/ac**	**bu/ac**	**bu/ac**	**bu/ac**	**bu/ac**	**bu/ac**
Meridian	129	139	72	105	86	106	86	149	109	105
Stephens	138	129	84	125	109	115	97	149	118	113
ORCR8313	-	120	77	105	-	98	-	-	-	100
Neeley	113	129	46	73	83	75	64	119	88	81
Test Weight	**lb/bu**	**lb/bu**	**lb/bu**	**lb/bu**	**lb/bu**	**lb/bu**	**lb/bu**	**lb/bu**	**lb/bu**	**lb/bu**
Meridian	60.6	61.5	-	-	-	60.0	60.2	59.0	60.3	60.8
Stephens	59.0	59.9	-	-	-	59.0	57.2	58.0	58.6	59.5
ORCR8313	-	62.3	-	-	-	63.5	-	-	-	62.9
Neeley	61.3	62.9	-	-	-	60.0	59.6	60.0	60.8	61.5
Lodging	**%**	**%**	**%**	**%**	**%**	**%**	**%**	**%**	**%**	**%**
Meridian	30	30	30	0	0	70	6.2	40	26	33
Stephens	20	30	0	0	0	10	5	30	12	10
ORCR8313	-	30	20	0	-	10	-	-	-	15
Neeley	45	15	90	60	60	90	27.5	0	48	64

9300027

University of Idaho
College of Agriculture
SW Idaho R/E Center
29603 U of I Lane
Parma, Idaho 83660-9637
U.S.A.
208-722-6701
FAX 208-722-6708

August 30, 1990

Dr. Ed Souza
Aberdeen R & E Center
P. O. Box AA
Aberdeen, ID 83210

Dear Ed:

I took the time to summarize the results of our winter nurseries 1988 through 1990 and to make some specific comparisons involving ID0360. Feel free to use the information and table as you see fit, *i.e.* the request for release packet, cereal schools.

ID0360 appears to have some distinct advantages over Ute in our area. Over 12 site years ID0360 yielded 5 bu/A higher than Ute ($p>F = .0001$) and averaged 2.0 lb/bu higher in test weight ($p>F = .0001$). Protein in ID0360 did not differ statistically from Ute ($p>F = .1422$) when the 8 site years from 1988 and 1989 were evaluated. We have not received the 1990 data as yet.

On the down side, ID0360 is appreciably taller than Ute and lodges more. I might put this in perspective for our area. Lodging is a concern to our producers insofar as it reduces production and slows the harvest. On the other hand, I don't know of anyone custom combining in the area that is actually charging more for combining lodged grain than standing grain, even though it is more costly in terms of time, fuel, wear and tear. Our producers, were they hard red growers, would work around the lodging problem if they knew the production was going to be greater even though the lodging was a risk. Also, most of our wheat is furrow irrigated and the extra height would not affect movement of sprinkler lines. For our sprinkler irrigated wheat, the height of ID0360 is a problem. For those with a history of lodging, either N rates would be reduced, timing of application would be delayed, or Cerone would be used, or any combination of the above would be employed to reduce lodging risk.

I sincerely hope ID0360 will be approved for release. Its test weight and production performance would represent a significant improvement in financial returns for many irrigated hard red winter wheat producers.

I will add a word or two here regarding the comparison with Manning, Hawk and Thunderbird. ID0360 over 8 site years (1988-89) did not differ from Manning in protein or test weight but was significantly ($p>F = .0029$) more productive averaging 9 bu/A higher. ID0360 was shorter than Manning by almost 3 inches and lodges appreciably less ($p>F = .0001$).

We have included Hawk and Thunderbird in the last two years of the nurseries. ID0360 yielded significantly ($p>2.05$) greater than Hawk and Thunderbird wasn't even close. ID0360 was slightly shorter than these two proprietaries. Lodging differences were not great. Thunderbird had the greatest protein.

I hope this is helpful. Should you have any questions let me hear from you.

Cordially,

Brad Brown

Bradford Brown
Extension Agronomist

BB:j754

23

Mean grain yield, protein, test weight, plant height and lodging for ID0360 and other irrigated hard red winter wheat entries in Southwest Idaho Extension Cereal Nurseries. 1988-1990.

Entry	Grain Yield (bu/A)			Protein (%)			Test Weight (lb/bu)			Plant Height (in)			Lodging (%)		
	88-89	89-90	88-90	88-89	1989	88-89	88-89	89-90	88-90	88-89	89-90	88-90	88-89	89-91	88-90
ID0360	125	120	119	11.5	11.5	11.5	61.8	61.9	61.6	37.5	36.6	37.2	11	12	14
Ute	118	112	114	11.3	11.4	11.2	59.8	59.8	59.6	29.3	29.2	29.4	3	1	2
Manning	115	-	-	11.5	-	-	61.7	-	-	40.3	-	-	49	-	-
Hawk	-	113	-	-	11.7	-	-	63.0	-	-	37.5	-	-	21	-
Thunderbird	-	97	-	-	13.2	-	-	63.2	-	-	37.4	-	-	12	-
$LSD_{.05}$	5	4	3	.3	.4	.4	.5	.4	.4	.7	.6	.5	10	10	7

j755

Table 1. Mean grain yield, protein, test weight, plant height, and percent lodging of irrigated winter wheat and winter barley. Parma, New Plymouth and Hammett combined. 1991.

Entry	Grain Yd[1/] bu/A	Protein %	Test Wt. lb/bu	Plant Ht. in.	Lodging %
		Soft White Winter Wheat			
Stephens	108		59.9	35.5	0
Dusty	118		60.2	36.3	0
Malcolm	112		60.0	36.4	0
ORCW8314	109		59.6	36.8	0
ORFW75336	120		60.1	36.2	0
ID81-273B	115		61.4	35.8	3
Daws	110		60.4	37.3	0
Kmor	107		58.6	36.8	14
$LSD_{.05}$[2/]	7		.7	1.1	10
		Hard Red Winter Wheat			
Ute	98		60.0	30.2	0
Hawk	113		62.3	39.3	18
ID0360	108		61.2	38.3	5
ORCW08313	114		62.8	38.9	0
$LSD_{.05}$	7		.7	.9	11
		Winter Barley			
Sprinter	134		52.3	40.0	45
Boyer	141		48.6	39.7	34
Hundred	133		49.1	38.2	49
Mal	130		48.7	39.6	38
B3035	138		48.8	32.4	8
B2607	140		47.8	40.0	34
$LSD_{.05}$	13		1.1	1.1	22

1/ Grain yield is based on a test weight of 48 lb/bu for barley and 60 lb/bu for wheat, after correction of dry weight to a moisture content of 11%.

2/ Means must differ by more than the $LSD_{.05}$ to be statistically different at the 5% probability level.

lef2000g

9300027

Mean grain yield, protein content, test weight and plant height of irrigated winter wheat, winter barley and winter triticale. Dietrich, Carey, Burley and Jerome combined. 1990.

Variety	Grain Yd.(1) bu/A	Protein(2) %	Test Weight lb/bu	Plant Ht. in.
		Soft White Winter Wheat		
Nugaines	97.9		60.3	31.0
Dusty	98.8		58.6	32.4
Stephens	93.4		58.4	31.9
Malcolm	102.9		59.2	32.1
Madsen	97.6		57.8	32.6
Daws	93.0		59.0	32.1
OSU 21	87.7		57.3	33.0
FW25336	101.9		59.1	32.4
PB1 57A	97.7		58.1	31.5
Syringa	100.6		59.5	33.0
		Hard Red Winter Wheat		
Neeley	97.4		62.1	36.8
Ute	89.3		58.8	27.9
Manning	97.2		60.8	34.8
ID0360	104.5		61.0	33.8
ID0361	108.1		60.7	34.0
		Winter Barley		
Scio	101.8		48.0	30.4
Boyer	105.4		48.3	31.8
Schuyler	100.9		48.8	32.9
Mal	101.7		47.2	32.5
AB812	95.6		48.3	30.4
Sprinter	101.7		48.8	32.7
		Winter Triticale		
Flora	87.5		44.5	30.0
B81420	108.8		50.0	39.0
VT086497	83.0		45.7	29.0
Whitman	98.2		49.5	39.0
VT085139	85.0		48.4	30.7
FT87788	122.6		49.7	41.0

1 Grain yield based on a test weight of 60 lb/bu for wheat, 48 lb/bu for barley and 50 lb/bu for triticale.

2 "As is" basis

3 Wheats Wheats grown at Dietrich, Carey and Burley, barley at Deitrich Carey, Burley, Jerome and triticale at Dietrich and Burley.

1991 Extension trial results in District III (Rupert and Jerome) and District IV (Idaho Falls and Soda Springs)
Data courtesy of L. Robertson.

	District III irrigated yield	District IV dryland yield	District III irrigated test wt.	District IV dryland test wt.	District III irrigated height	Rupert lodging	Soda Springs lodging
	bu/ac	bu/ac	lb/bu	lb/bu	in	%	%
Meridian	**127**	**59**	**63**	**61**	**35**	**0**	**0**
Neeley	121	63	64	60	40	10	0
Manning	121	62	63	60	38	20	10
Ute	123		62		29	0	
Promontory	126	64	64	61	39	0	0
IDO421	111	60	63	63	44	20	0
Blizzard		62		61			30

9300027

COOPERATIVE EXTENSION SERVICE
University of Idaho
College of Agriculture
In Cooperation with the
U.S. Department of Agriculture

July 26, 1991

TO: Ed Souza

FROM: Larry Robertson

RE: Quality of IDO360 from my trials

Enclosed are the quality results from the samples taken from the plots I have had over the past two years. The 1989 samples are composites of three irrigated locations, Kimberly, Dietrich and Gooding and the 1990 samples are composites of Dietrich, Carey and Burley. Equal amounts of grain were taken from each location for the composited sample. This procedure was followed for IDO360 as well as the check varieties.

	1989			1990		
Characteristic	IDO360	Neeley	Ute	IDO360	Neeley	Ute
Flour Protein	10.9	11.4	10.4	10.4	11.0	10.3
Flour Yield	62.3	61.8	63.7	61.9	62.2	63.8
Mixograph						
Peak	3.4	2.7	2.5	3.8	3.4	3.2
Height	5.5	5.8	5.6	5.4	5.4	5.5
Tolerance	72	71	73	78	77	75
Absorption	64	64	63	63	64	63
Test Bake						
Mix time	3.0	2.6	2.4	3.3	2.9	3.1
Dough type	5	6	6	5	6	5
Abs.(14%)	61	61	60	60	61	60
Loaf vol.	665	840	820	635	785	725
Exterior	2.0	3.0	3.0	1.5	3.0	1.5
Interior	1.5	2.0	2.0	1.0	2.0	1.5
Comments	all doughs were rated as sticky IDO360 and Ute were rated as pinhole (inadequate oxidation) for both years. Ute was coarse in 1989 and had wrong side break for 1990 samples.					

It appears from these samples that IDO360 possesses adequate protein and milling qualities for use in our typical markets. Mixograph data indicates the dough has adequate mixing characteristics, in fact it has some advantages in

28

mixing time compared to Neeley and Ute. A potential serious problem may exist in the dough handling properties of ID0360 and especially in loaf volume.

If this data is representative of the variety, ID0360 will not enhance the quality of wheat coming from Idaho and in fact will be a detriment. With the superior yielding ability and other agronomic characteristics of this variety, it likely would not take long for it to be grown on significant acreages of that planted to winter wheat. I have not seen much of your quality data but think we should proceed very carefully and be sure quality characteristics are carefully documented before proceeding. I am especially concerned about the problems that may exist with the much lower loaf volume this variety shows.

I would be pleased to discuss this in more detail with you.

cc: Mark Kruk

9300027

Memorandum
November 14, 1991

University of Idaho
College of Agriculture
R & E Center
P.O. Box AA
Aberdeen, Idaho 83210
208-397-4181
FAX: 208-397-4311

To: Larry Robertson

From: Ed Souza, University of Idaho, Aberdeen REC

Subject: Extension Trial Milling and Baking Data for IDO360

I would like to thank you for summarizing the IDO360 milling and baking data from your extension trials. The data is fairly similar to the results we have obtained in the Aberdeen trials and in the Western Regional Nursery. IDO360 is satisfactory for milling characteristics, excellent for mixing characters, and deficient for loaf volume.

I have discussed these results with Mike Welsh of Cereal Food Processors. In conversations with Mike it appears that mixing characteristics are very important for a good hard red winter wheat. Loaf volume is important but of secondary consideration because typically either a spring wheat is blended with the winter wheat or a chemical amendment can be added to increase loaf volume. In their lab tests of IDO360 they found the loaf volume acceptable relative to Manning and the mixing characteristics a definite plus.

In breeding wheats for the irrigated southern Idaho conditions, there appears to be a negative genetic correlation between mixing time and loaf volume. The mixing characteristics of IDO360 are fairly similar to Peak and Peak 72 which also had the tradeoff between mixing characters and loaf volume. I have gone back and forth about the quality of IDO360 but feel that the mixing characteristics of IDO360 are desirable enough to support release.

I intend to include quality data with your comments into the release package. I appreciate your participation in the accumulation of data for release.

30

9300027

University of Idaho
College of Agriculture
SW Idaho R/E Center
29603 U of I Lane
Parma, Idaho 83660-9637
U.S.A.
208-722-6701
FAX 208-722-6708

August 30, 1990

Dr. Ed Souza
Aberdeen R & E Center
P. O. Box AA
Aberdeen, ID 83210

Dear Ed:

I took the time to summarize the results of our winter nurseries 1988 through 1990 and to make some specific comparisons involving ID0360. Feel free to use the information and table as you see fit, *i.e.* the request for release packet, cereal schools.

ID0360 appears to have some distinct advantages over Ute in our area. Over 12 site years ID0360 yielded 5 bu/A higher than Ute ($p>F = .0001$) and averaged 2.0 lb/bu higher in test weight ($p>F = .0001$). Protein in ID0360 did not differ statistically from Ute ($p>F = .1422$) when the 8 site years from 1988 and 1989 were evaluated. We have not received the 1990 data as yet.

On the down side, ID0360 is appreciably taller than Ute and lodges more. I might put this in perspective for our area. Lodging is a concern to our producers insofar as it reduces production and slows the harvest. On the other hand, I don't know of anyone custom combining in the area that is actually charging more for combining lodged grain than standing grain, even though it is more costly in terms of time, fuel, wear and tear. Our producers, were they hard red growers, would work around the lodging problem if they knew the production was going to be greater even though the lodging was a risk. Also, most of our wheat is furrow irrigated and the extra height would not affect movement of sprinkler lines. For our sprinkler irrigated wheat, the height of ID0360 is a problem. For those with a history of lodging, either N rates would be reduced, timing of application would be delayed, or Cerone would be used, or any combination of the above would be employed to reduce lodging risk.

I sincerely hope ID0360 will be approved for release. Its test weight and production performance would represent a significant improvement in financial returns for many irrigated hard red winter wheat producers.

I will add a word or two here regarding the comparison with Manning, Hawk and Thunderbird. ID0360 over 8 site years (1988-89) did not differ from Manning in protein or test weight but was significantly ($p>F = .0029$) more productive averaging 9 bu/A higher. ID0360 was shorter than Manning by almost 3 inches and lodges appreciably less ($p>F = .0001$).

We have included Hawk and Thunderbird in the last two years of the nurseries. ID0360 yielded significantly ($p>2.05$) greater than Hawk and Thunderbird wasn't even close. ID0360 was slightly shorter than these two proprietaries. Lodging differences were not great. Thunderbird had the greatest protein.

I hope this is helpful. Should you have any questions let me hear from you.

Cordially,

Brad Brown

Bradford Brown
Extension Agronomist

BB:j754

31

Mean grain yield, protein, test weight, plant height and lodging for ID0360 and other irrigated hard red winter wheat entries in Southwest Idaho Extension Cereal Nurseries. 1988-1990.

Entry	Grain Yield (bu/A)			Protein (%)			Test Weight (lb/bu)			Plant Height (in)			Lodging (%)		
	88-89	89-90	88-90	88-89	1989	88-89	88-89	89-90	88-90	88-89	89-90	88-90	88-89	89-91	88-90
ID0360	125	120	119	11.5	11.5	11.5	61.8	61.9	61.6	37.5	36.6	37.2	11	12	14
Ute	118	112	114	11.3	11.4	11.2	59.8	59.8	59.6	29.3	29.2	29.4	3	1	2
Manning	115	-	-	11.5	-	-	61.7	-	-	40.3	-	-	49	-	-
Hawk	-	113	-	-	11.7	-	-	63.0	-	-	37.5	-	-	21	-
Thunderbird	-	97	-	-	13.2	-	-	63.2	-	-	37.4	-	-	12	-
$LSD_{.05}$	5	4	3	.3	.4	.4	.5	.4	.4	.7	.6	.5	10	10	7

j755

LABNUM	VARIETY	IDNO	CLASS	TWT	WMIST	WPROT	UWHRD	FYELD	FASH	FPROT	MABS	MABSC	MTYPE	FABS	FABSC	FPEAK	FSTAB
902427	LEWJAIN	CI017909	SWW	61.5	10.6	7.1	41	73.6	.41	6.0	55.8	58.1	3L	54.4	56.7	1.9	6.3
902428	KMOR	WA7529	SWW	59.6	11.8	7.0	43	74.6	.41	5.8	54.4	56.9	3L	54.0	56.5	1.2	3.9
902429	SPRAGUE	CI015376	SWW	61.9	10.9	11.9	36	73.1	.42	10.1	58.5	56.7	2M	58.8	57.0	2.1	4.1
902430	ELTAN	WA7431	SWW	61.3	11.4	12.2	42	74.5	.43	10.6	59.8	57.5	6M	57.8	55.5	7.8	12.2
902431	DAWS	CI017419	SWW	59.5	9.7	9.0	34	74.9	.43	7.5	55.7	56.5	2M	56.9	57.7	1.8	5.2
902432	ELTAN	WA7431	SWW	58.9	9.9	8.6	35	75.0	.39	7.3	54.5	55.5	2L	50.3	51.3	1.2	2.2
902433	KMOR	WA7529	SWW	57.9	9.7	8.4	30	75.6	.34	6.9	55.0	56.4	2L	55.4	56.8	2.1	5.2
902434	CREW	CI017951	CLUB	60.8	10.2	10.0	43	75.2	.42	8.4	51.3	51.2	2L	56.7	56.6	2.2	1.7
902435	RELY	WA7527	CLUB	62.2	10.1	9.5	40	76.0	.41	8.1	51.8	52.0	2L	56.8	57.0	1.6	1.5
902436	UTE+NEELY		HRW	62.8	9.3	11.6	73	75.1	.37	10.6	64.8	62.5	4H	69.0	66.7	9.0	14.5
902437	.	ID360	HRW	63.3	9.1	12.4	83	73.3	.42	10.3	63.9	61.9	4H	65.1	63.1	10.0	14.5

mean nursery flour protein = 8.3 mill type = Miag Multomat

LABNUM	VISCO	VISCC	BABS	BABSC	MTIME	LVOL	LVOLC	BCRGR	PROQ	CODI	CODIC	TGS	CAVOL	SCSCOR	WTIN	NOSCOR	LOCATION
902427	30	94								9.39	9.13	8	1405	81.0	307	72	Pullman
902428	30	119								9.27	9.00	8	1365	79.0	294	69	Pullman
902429	123	80								8.65	8.85	6	1380	77.0	354	69	Omak
902430	149	89								8.69	8.94	5	1330	74.0	311	66	Omak
902431	63	83								8.60	8.51	5	1310	74.0	333	71	Pullman
902432	50	71								8.93	8.82	8	1330	77.0	318	69	Pullman
902433	45	76								9.09	8.93	8	1380	80.0	295	68	Pullman
902434	42	41								8.90	8.91	8	1295	72.0	352	70	Pullman
902435	52	55								8.86	8.85	7	1325	72.0	354	70	Pullman
902436	213	126	70.5	68.2	3.4	865	722	6	+1	7.82	8.01	1			325	68	South Idaho
902437	130	82	66.1	64.1	3.6	805	681	6	0	7.91	8.07	1			327	69	South Idaho

COMMENTS: These samples represent advanced lines which are candidates for release. Soft White Winter selections (902427 and 902428) were grown at Pullman, WA. One to two bushels were milled on a Miag Multomat (Pilot Mill) and sub-samples of the flour were sent to 17 industry laboratories for quality evaluation. These cooperators represent major foreign and domestic users of PNW wheat. Results from the individual collaborators are summarized in a separate project report: PNW Grains Council Collaborative Test, Twentieth Annual Report - 1990 Crop. Our evaluation of these selections is as follows: Lewjain (902427) served as the check variety for comparison with Kmor (902428). Kmor showed a slight advantage in flour yield, however the cookie spread was slightly less. Japanese sponge cake volume was somewhat less, however the cake score was comparable. Japanese Udon noodle score was found to be slightly less. Sprague (902429) served as the check variety for comparison with Eltan (902430). Eltan showed a slight advantage in flour yield and cookie spread, however the sponge cake volume and score as well as Udon noodle weight increase and score were somewhat less. Daws (902431) served as the check variety for comparison to Eltan (902432) and Kmor (902433). Eltan and Kmor showed some advantage in flour yield with less flour ash content. Both had significantly larger cookie diameter and they also showed an advantage in sponge cake volume and score, particularly Kmor. The Udon noodle weight increase and score of Eltan and Kmor were somewhat less than Daws. Crew (902434) served as the check variety for comparison to Rely (902435). Rely showed a slight advantage in flour yield with a comparable cookie diameter. It had a slight advantage in sponge cake volume. The sponge cake and Udon noodle scores were equal to that of Crew. Ute and Neely (902436) served as the check variety for comparison to ID360 (902437). Flour yield of ID360 was significantly less and flour ash significantly higher. Bread loaf volume was significantly less also, however bread crumb grain was equal.

9300027

FGIS Technical Center, FMD
Board of Appeals and Review
10383 N. Executive Hills Blvd.
P. O. Box 20285
Kansas City, MO 64195

16 OCT RECD

TO: Ed Souza, Plant Breeder
University of Idaho Experiment Station
Aberdeen, Idaho

FROM: Arnie R. Class, Chairman
Board of Appeals and Review ARC

SUBJECT: Classification of the Variety 360

Thank you for the sample(s) you submitted representing the variety 360. Based on a review of the above mentioned sample(s) kernel and varietal characteristics, the Board of Appeals and Review (BAR) has determined the variety 360 meet the classing requirements for HRW.[1/]

Kernel characteristics include the color, shape, length of kernel and the shape of the germ, crease and brush.

Sample Evaluation:

Uniform in Characteristics	[X]	Yes	[ ]	No
Favors Another Class	[ ]	Yes	[X]	No
If yes, what class?				
Could Cause Marketing Problems	[ ]	Yes	[X]	No

Other Comments: Excellent class characteristics for HRW.

Weight of Sample Submitted: 600 grams

1/ The above decision applies only to the quantity of wheat submitted for our review and does not apply to any other identified lots. The effect of environment on morphological characteristics may be significant and necessitate reevaluation.

cc: John W. Marshall

34

9300027

CEREAL FOOD PROCESSORS INC

General Offices:
2000 Johnson Drive
Mission Woods, Ks.

Mill:
701 E. 17th
Wichita, Ks. 67214

BAKING REPORT

BAKED - 6/22/91

DATE RECEIVED 6-21-91

SOURCE Ogden

SAMPLE ID C/B	IDO 3160 U of I Aberdeen	Manning Irrigat U of I Aberdeen
WHEAT ANALYSIS (12% MB)	0844	13009 0847
TEST WEIGHT 58.7	58.7	58.8
MOISTURE 8.5	9.5	9.5
WHEAT PROTEIN 15.8	15.59	14.69 (14.75)
FLOUR ANALYSIS (14% MB)		
MOISTURE		
ASH		
PROTEIN		
FALLING NUMBER		
TREATMENT		
FARINOGRAPH		
ABSORPTION	62.1	64.5
VALORIMETER	—	—
PEAK	10.0	7.0
MTI	20	25
STABILITY	19.5	15.5
BAKING DATA		
METHOD	#3 S/O T	#1 S/O T
ABSORPTION	64	65
MIX TIME	9	9
LOAF VOLUME	3050	3125
SCORING DATA		
CRUMB COLOR	5 creamy	4 dull
GRAIN	6 sl tight	6 sl tight
TEXTURE	6 smooth	6 Smooth
EXTERNAL	5 Avg vol	6
REMARKS	Good Bake	Good Strength

35

Exhibit E. Statement of Basis of Applicant's Ownership

Meridian was developed initially through cooperative research between the USDA-ARS and the University of Idaho. Management of the Aberdeen breeding program was transferred from the USDA-ARS to the Idaho Agricultural Experiment Station (IAES) in 1987. Final stages of testing and development of Meridian were administered by the Idaho Agricultural Experiment Station. IAES will release and maintain breeders seed of Meridian.